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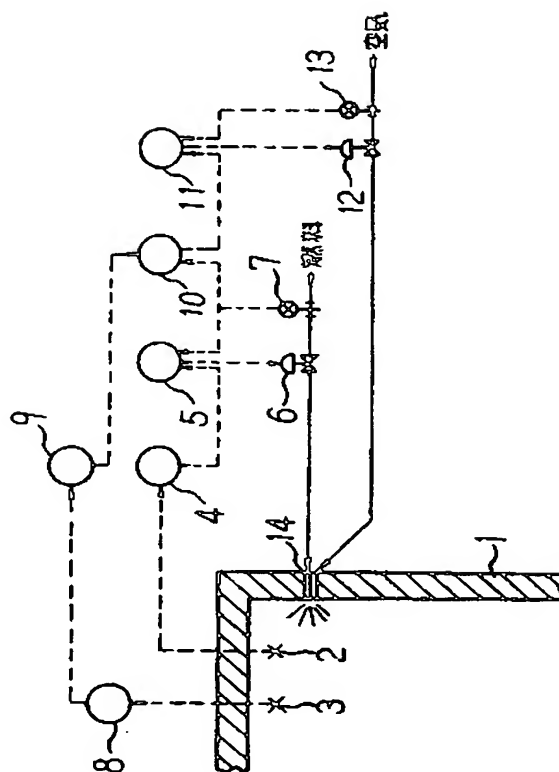
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APPLICANT : NGK INSULATORS LTD;

INVENTOR : NODA MAKOTO;

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TITLE : CONTROLLING METHOD FOR
 ATMOSPHERE OF NON-OXIDIZING
 FURNACE



ABSTRACT : PURPOSE: To reduce fuel consumption per unit product without causing oxidation of steel material, by measuring oxygen partial press. in the atmosphere of a nonoxidizing furnace for heating steel material, then by controlling the air flow rate according the degree of reduction obtained on the basis of the oxygen partial press.

CONSTITUTION: The temp. in a nonoxidizing furnace 1 for heating steel material is detected by a thermocouple 2, and the deviation from the set temp. which is previously stored by a furnace temp. controller 4 is fed to a fuel flow controller 5. The fuel charged to the furnace 1 is detected by a detecting means 7, delivered to the controller 5, and the fuel flow rate is controlled by a control valve 6 according to the deviation from the furnace temp. On the other hand, oxygen partial press. of the furnace atmosphere is measured by an analyzing meter, and the degree of reduction defined by $(CO+H_2)/(CO_2+H_2O)$ is determined. The reduction degree is fed to an atmosphere controller 9, where the deviation from the desired value is corrected, then it is inputted as air-fuel ratio set signal to a air-fuel ratio setting 10. To the setting 10 is inputted the fuel flow rate from the controller 5, and computed with the air-fuel ratio set signal, then it is fed to an air flow controller 11. Air blown into the furnace 1 is detected by a detecting means 13, delivered to the controller 11, and the air flow rate is controlled correctly by an air flow control valve 12 according to the calculated value described above.

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